

PACKAGE CONTAINING A WINDOW AND A PERFORMANCE CHARACTERISTIC  
INDICATOR

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LILKAR ZUGEIL MOLINA  
JOHN THOMAS MILBY

**CROSS REFERENCE TO RELATED APPLICATIONS**

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**FIELD OF INVENTION**

The present invention relates to a package for containing and dispensing absorbent articles. Proper selection and use of such articles is communicated by means of using a distinctive coding system associated with the articles and their packaging, and a window that  
15 displays the thickness of the article. In preferred embodiments, the invention relates to absorbent articles for absorbing bodily fluids, especially menses.

**BACKGROUND OF THE INVENTION**

Surprisingly, some of the problems associated with the proper selection and use of such articles is traceable to modern developments in the technologies used to improve consumer  
20 satisfaction. Improvements made in modern absorbent articles in an effort to increase in-use comfort and consumer satisfaction have resulted in the proliferation of sizes, shapes, conformations and brands in the field of disposable absorbent articles such as feminine care articles. Because of the proliferation of sizes, shapes, conformations and brands in the field of  
25 disposable absorbent articles, customers have difficulty differentiating between the many types of articles and the variations of article characterizations within these article types.

Differentiation and selection of consumer articles on store shelves is difficult due to the many types of articles and variations of article characterizations within these article types. Differentiation and selection of articles is also particularly difficult when the artwork, color, and/or shape of the package changes. In addition, differentiation and selection of catamenial  
30 articles on store shelves are particularly difficult due to the many choices of article absorbencies such as: light absorbency, regular absorbency, and extra absorbency and article configurations, for example, daytime articles, nighttime articles, winged versions and the like.

Consumers do not make the proper selection because they are uncertain of the size, shape, and bulk of the absorbent article. A contributing factor to the consumer's uncertainty occurs when a consumer is not able to estimate by visual inspection the size, shape, and bulk of absorbent articles such as baby diapers, sanitary napkins, and adult incontinence garments. As a 5 result of the consumer's uncertainty, the consumer may make an inadvertent selection of a low absorbency catamenial for use on a high flow day, which can result in considerable dissatisfaction. Whatever the reason, it is problematic for a manufacturer when a well-designed article is judged by its users to be sub-optimal in performance, when the real problem stems from selection errors, which result in misuse.

10 Moreover, the consumer may solve the problem of lack of visual inspection by undesired means. Where the package does not show the article visually, consumers may resort to opening the package to visually inspect the article. Although the consumer may be satisfied about visually inspecting the article, the package of articles are left open and may not be resalable. Thus, allowing the customer to visually inspect the article through the package is a benefit to the 15 merchant and/or owner.

Proper selection of consumer articles requires explicit labeling and/or instructions. Despite considerable attention being given to such matters, mistakes continue to be made by consumers. In some instances, the consumer may be inattentive, unable to determine the thinness or thickness of the article, or may have a limited amount of time to make a selection of a 20 given article. In others, linguistic difficulties may contribute to improper selection and usage.

Typical instructional matter pertaining to the proper selection and use of absorbent articles conventionally comprises printed text, pictures, diagrams, labels, and combinations thereof. The objective of any optimal instructional matter is to be univocal, i.e., to convey a message regarding proper selection and usage in such a clear, concise, and exact manner that 25 essentially any user, regardless of distractions or adverse conditions, is prompted to choose and employ the article correctly.

Often color is used to convey a particular performance characteristic of a given article. For example, at least one manufacturer of catamenial tampons uses color-based signals on both the outer packaging and the wrapper of such tampons to denote absorbent capacity. In such 30 articles, different colors are used to represent different article characteristic levels (in this case absorbency). For example, a green band on the package and wrapper of a tampon might signal a "super" absorbency tampon, while a blue band might signal a "regular" absorbency tampon.

Moreover, a woman's menstrual cycle is typically characterized by initial "mild flow" days, followed by "medium flow" days, and concluding with "low flow" days. In order to meet the need for feminine protection during the entire sequence, at least one manufacturer has begun the sale of kits, which contain multiple disposable absorbent catamenials having extra, regular, 5 and light absorbent capacities, respectively. In this way, the need for protection can be met with as little discomfort as possible to the user over the entire menstrual cycle. Alternatively, light, regular, and extra absorbency articles can be sold separately or as a complete line of articles. Compliance with the prescribed sequence of usage is a prerequisite for the successful completion of any multi-phase regimen. This also applies to the aforesaid kits.

10 Accordingly, the proper usage of extra, regular, or light capacity absorbent articles begins with the proper selection of such articles. The present invention provides an easy and intuitive package for selecting the proper absorbency, which provides a consumer benefit and ensures that the right article will be taken home.

15 SUMMARY OF THE INVENTION

The present invention encompasses a package comprising a container comprising a layer having an interior surface and an exterior surface. The layer forms an interior space. A plurality of absorbent articles forms a stack within the interior space of the container. Each of the absorbent articles has a thickness and is individually wrapped in a wrapper. The wrapper of each 20 of the absorbent articles has a distinctive design and a first color. The exterior surface of the container comprises a distinctive color which is color coordinated with the first color of the distinctive design.

The first window in the container reveals at least a portion of the thickness of at least one of the absorbent articles and at least a portion of the distinctive design of the wrapper.

25 The wrapper can comprise a first color is a complimentary color to the distinctive color on the exterior surface of the container. In addition, the wrapper can comprise a first color which is an analogous color to the distinctive color on the exterior surface of the container. The absorbent articles can comprise catamenial articles. Specifically, the absorbent articles comprise sanitary napkins and interlabial devices.

30 In addition, the package can comprise a second window wherein the second window is a repurchase indicator.

The present invention can also encompass a package comprising a container comprising a layer having an interior surface and an exterior surface. The layer forms an interior space. A

stack of absorbent articles are contained within the interior space. Each of the absorbent articles has a thickness and is individually wrapped in a wrapper. The wrapper of the absorbent articles provides a signal which indicates a pre-determined absorbent article performance characteristic. The signal of the pre-determined performance characteristic is displayed as a distinctive design 5 on the wrapper of each of the absorbent articles and the exterior surface of the container.

The container comprises a window. The window reveals at least a portion of the thickness of the absorbent article and at least a portion of the distinctive design of the wrapper. The signal of the pre-determined performance characteristic for the wrapper of the absorbent articles and for the exterior of the container signal the same pre-determined performance characteristic.

10 Moreover, the signal of the pre-determined performance characteristics may comprise different color intensities of the same hue. The exterior surface of the container has distinctive design which may have a first color. Specifically, the package can comprise at least two different absorbent articles which have distinct and dissimilar pre-determined article performance characteristics wherein the pre-determined article performance characteristic is absorbent 15 capacity. The package may also have exterior surfaces of the layer which further comprises a colored section having a colored section having a color which is color coordinated with the first color of the distinctive design to signal the performance characteristic of the articles.

In another embodiment, the package comprises a container having a layer having an interior 20 surface and an exterior surface. The layer forms an interior space. A stack of absorbent articles are contained within the interior space. Each of the absorbent articles has a thickness and a color. The design provides a signal which indicates a pre-determined absorbent article performance 25 characteristic. The signal of the pre-determined performance characteristic is displayed on the articles and the exterior surface of the container. The container comprises a window. The window reveals at least a portion of the thickness of the absorbent article and the signal of the performance characteristic of the article. Moreover, the package of each of the articles is further packaged in an individual article wrapper wherein the wrapper also signals the pre-determined article performance characteristic.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

30 While the specification concludes with claims particularly pointing out and distinctly claiming the subject matter which is regarded as forming the present invention, it is believed that the invention will be better understood from the following description taken in conjunction with the accompanying drawings, in which:

Figure 1 is the front view of a container of thin maxi sanitary napkins.

Figure 2a is a perspective view of an alternative embodiment of a container.

Figure 2b is a perspective view of a wrapper.

Figure 2c is a perspective view of a wrapper.

5 Figure 2d is a perspective view of the color spectrum.

Figure 3 is a front view of a container for a kit containing maxi sanitary napkins, thin maxi sanitary napkins, and ultra sanitary napkins.

Figure 4 is the color line for white, gray, and black.

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#### DETAILED DESCRIPTION OF THE INVENTION

Referring primarily to Figure 1, the package illustrated is a flexible container 27 made from a layer 29. Layer 29 has an interior surface and an exterior surface. Layer 29 is folded and secured together. The container 27 has a length, width, and a height dimension. The container has a front face 31, a rear face 32, a side face 33, a side face 34, a top face 35, and a bottom face 36. The container may be any shape known in the art. For example, the container may have a polyhedral shape defining or forming a polyhedral enclosure.

15 The interior 28 of the container 27 defines an interior space 2 for containing absorbent articles 6. The absorbent articles 6 may all be identical to one another or may be different absorbent articles 6.

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The absorbent articles 6 are arranged to form a stack 30 within the interior space 2 of the container 27. The articles 6 may be stacked in any direction. As used herein, the term "stack" is meant an orderly pile. For example, the articles may be stacked vertically, horizontally, or at any angle inside the interior 2 of the container 27.

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The container 27 may include at least one gusset 3 integrally formed with at least one side face 33 or side face 34, and a means for accessing the interior space 2 for easy access to the article 6. The mechanism or means for accessing the interior space 2 can be a line of perforations 8. In other alternative embodiments, a means for accessing the interior space 2 can be tabs and adhesive openings. The mechanism or means for accessing the interior space 2 can be any means known in the art.

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The layer 29 may be composed of different materials or may be composed of substantially the same type of material. The layer 29 may be composed of one layer 29 or a laminate. The material can comprise of blown or cast film in a blend of low density polyethylene

and linear low density polyethylene, metallocenes, ethylene vinyl acetate, surlyn, polyethylene terephthalate, biaxially oriented polypropylene, and/or nylon.

In its broadest aspect, the present invention relates to color and/or design indicators for use with absorbent articles and the absorbent articles' corresponding packaging. The use of 5 different colors can be used to signal absorbency or other article performance characteristics such as size and strength.

An article's performance characteristic is the consumer recognition of the execution of a particular characteristic of the article. As used herein, the term "characteristic" refers to any 10 distinguishing trait, quality, or properties of the article. Within the context of this description, the article's performance characteristic can be indicated by the color, shape, size, or the like of the article. For example, an outer package contains super absorbent sanitary pads individually wrapped in an orange wrapper. The orange color of the wrapper is the indicator for the 15 performance characteristic, which indicates super absorbency. The orange color of the wrapper provides the consumer with an easy identification of the article. The window in the outer package reveals any portion of the orange wrapper and/or the thickness of the sanitary napkin. The thickness of the product is also an indicator of the product's performance.

The term "color," as used herein, is a visual effect resulting from the eye's ability to distinguish the different wavelengths or frequencies of light. The apparent color of an object depends on the wavelength of the light that it reflects. In white, or normal light, an opaque object 20 that reflects all wavelengths appears white and one that absorbs all wavelengths appears black. To describe a color with reasonable accuracy, three basic properties have been designated to identify the dimensions, or qualities, of color: 1) hue, the name of a color as found in its pure state in the spectrum i.e., that attribute of colors that permits them to be classified as red, yellow, green, blue, etc., or as an intermediate between any contiguous pair of colors; 2) value, the 25 lightness or darkness of a color; 3) and intensity, the degree of purity or strength of a color. While a wide palette of colors can be employed herein, it is preferred to use a member selected from the group consisting of white, orange, purple, lavender, red, green, blue, yellow, violet, gray, brown, and black.

Referring to Figure 1, at least one signal color 7 is placed on the wrapper 9 of the article 30 6 and at least one signal color 21 is placed on the exterior surface 38 of the outer container 1. Signal colors 7, 21 may be placed in any graphic or shape such as droplets, circles, parallelepipeds, or the like. The signal colors 7, 21 may be in any convenient size. The signal color 7 may encompass the entire wrapper 9 or may encompass part of the wrapper 9. Likewise,

the signal color 21 may encompass the entire container 27 or may encompass part of the container 27.

Referring to Figure 2a, the signal colors 7 on the wrapper 9 may encompass a design 39 and the signal color 21 on the exterior of the container 27 may encompass a design 40. The 5 designs 39, 40 can be any shape such as rectangular, square, elliptical, polygonal, triangular, etc. The design 39, 40 can encompass one shape or a combination of the afore-mentioned shapes. The design 39, 40 can encompass one color or several colors. As seen in Figure 2b and Figure 2c, the wrapper 9 encompasses a design 39.

Referring to Figure 2a, the signal color 7 and/or design 39 and the signal color 21 and/or 10 design 40 on the graphic 22 of the exterior of the container 27 may be variations of intensity and contrasting colors. When there is a design 39 on the wrapper 9 and/or article 6 to indicate a product characteristic and the design 39 has at least one color and/or shape, the signal color 7 on the wrapper 9 can be substantially similar to the signal color 21 on the exterior of the container 27. Moreover, when there is a design 39 on the wrapper 9 to indicate a product characteristic and 15 the design 39 has at least one shape, the shapes included in the design 40 on the graphic 22 of the exterior of the container 27 can be substantially similar to any of the shapes included in the design 39 on the wrapper 9. If the design 39 has colors, at least one color of the signal colors 7 is color coordinated with at least a portion of the exterior of the container 27. In an alternative embodiment, the color and/or shape on the wrapper 9 can have a different intensity than the color 20 and/or shape on the exterior of the container 27. By intensity, is meant the purity of the hue. For example, an intense red is one that is a very strong, pure red color. When a lighter or darker color is added to a color, the intensity will be less bright. In an alternative embodiment, the color and/or shape on the wrapper 9 can have a contrasting color than the color and/or shape on the exterior of the container 27. By contrast, is meant one light element and two dark elements.

25 Likewise, when there is a design 40 on the graphic 22 of the exterior container 27 to indicate a product characteristic and the design 40 has at least one color and/or shape, the signal color 21 on the exterior container 27 can be substantially similar by way of color and/or shape to the signal color 7 on the wrapper 9. Similarly, when there is a design 40 on the exterior of the container 27 to indicate a product characteristic and the design 40 has at least one shape, the 30 shapes included in the design 39 on the wrapper 9 can be substantially similar to any of the shapes included in the design 39 on the wrapper 9. If the design 40 has colors, at least one color of the signal colors 21 is color coordinated with at least a portion of wrapper 9.

By color coordinated, is meant the color of the design 39 on at least a portion of the wrapper 9 and the color of the design 40 on at least a portion of the exterior of the container 27 may be complimentary, analogous, warm/cool colors, monochromatic, and/or neutral. Referring to Figure 2d, by complimentary colors, is meant those colors which are directly opposite one other in the color spectrum or wheel. For example, blue 41 is the opposite of orange 42. Because blue 41 is the opposite of orange 42, gold, rust, and brown compliment shades of blue 41. By analogous colors, is meant those colors which are next to each other on the color wheel. For example, blue 41 could be color coordinated with green 43. Referring to Figure 2d, by warm and cool colors, is meant families of analogous colors. Warm colors are colors such as red 44, orange 42, and yellow 45. Cool colors are colors such as green 43, blue 41, and violet 46. Warm and cool colors may be mixed together. For example two warm colors on the wrapper 9 may be selected to match with one cool color on the exterior of the container 27. In another example, two cool colors on the wrapper 9 may be color coordinated with a warm color on the exterior of the container 27. By monochromatic, is meant all one color, but different shades, tones, or tints.

15 By neutral, is meant shades of white, black, gray, or beige.

Referring to Figure 1, the signal color 7 on the wrapper 9 of the article 6 and the signal color 21 on the exterior of container 27 are substantially similar or the same color. The colors are substantially similar if the colors closely resemble each other or if one color has the possibility of being mistaken for the other. A color is the "same" if the color corresponds so closely that it is indistinguishable.

When so employed, the signal colors 7, 21 provide an easy and intuitive method for selecting the proper absorbent article 6 (for example, that with the desired absorbency). When the signal color 7 is used on the wrapper 9 of the article 6, the signal color 7 provides a method for selecting the proper absorbent articles 6. In addition, the signal color 7 aides the consumer in identifying the absorbent article 6 when the absorbent article 6 is removed from the container 27 and placed in the bathroom drawer, purse, etc. An important advantage of having the same or substantially the same color for both the signal color 7 and the signal color 21 placed on the exterior surface 38 of container 27 is that the user is provided with the desired intuitive, selection, and usage means which is the object of this invention.

30 Many embodiments of absorbent articles are well-known in the art. Sanitary napkins, sanitary panties, interlabial devices, intravaginal devices (tampons), adult incontinence articles, infant diapers, pantiliners, and the like, have been described in the extensive patent literature and many such articles are in the stream of commerce. See, for example: for sanitary napkins U.S.

Patents: 4,463,045 issued to Ahr et al. and 4,556,146 issued to Swanson et al.; for tampons such as U.S. Patents: 5,087,239 issued to Beastall et al. and 5,279,541 issued to Frayman et al.; and for diapers such as U.S. Patents: 4,573,986 issued to Minetola et al.; 4,695,278 issued to

Lawson; 4,081,301 issued to Buell; and 4,515,595 issued to Kievit. Such articles contain an absorbent structure, typically in the form of a "core" or pad. Various fluid-permeable top layers, fluid-impermeable back layers, panty-protective "wings," tape fasteners and the like, are optionally used to construct elements for such articles and are all within the experience of those of ordinary skilled in the art.

Likewise, the manufacture of such articles having differing absorbent capacities (here, for the sake of simplicity, designated as "extra," "regular," and "light") is also a matter of routine. By way of example and not intending to limit the present invention, a modern "extra" absorbent article will typically have an absorbent core comprising an absorbent gelling materials ("AGM") in combination with a cellulosic batt of fibers. Conversely, a "light" absorbent article may comprise only the fibrous batt, without the AGM. A "medium" absorbent article may contain some intermediate level of AGM.

Again, without intending to limit the present invention, the following capacities (for menses) of absorbency designated as "extra," "regular," and "light," respectively, will typically, but non-quantitatively, fall within ranges.

#### **FOR ULTRA THIN PADS**

20	Size	Retained Capacity
	Regular Length	25 - 30 grams
	Long Length	30 grams
	Long Overnights	34 - 35 grams

#### **FOR INTERLABIAL DEVICES:**

25	Article		Retained Capacity	
Size	Length (mm)	Caliper (mm)	g @ .25 psi	g @ 1.0 psi
Light	76 (-16%)	4.5	3.7 (-35%)	2.7 (-32%)
Regular	91 (Base)	5.5	5.7 (Base)	4.0 (Base)
Long	106 (+16%)	6.5	10.5 (+84%)	6.7 (+67%)

**FOR TAMPONS:**

Size	Retained Capacity
Junior absorbency:	< 6 grams
Regular absorbency:	6 - 9 grams
5 Super absorbency:	9 - 12 grams
Superplus absorbency:	12 -15 grams

**FOR DISPOSABLE DIAPERS (AS URINE):**

There are no mandatory absorbency ranges for diapers. The diapers are marketed according to

10 weight:

Premie

Newborn

Small

Small - Medium

15 Large

Extra-Large.

Of course, the absorbent values of such capacities can be adjusted by the manufacturer, as evidenced by the fact that it has become commonplace to designate absorbency using various descriptive, but non-quantitative, terms such as "mini," "regular," "super," "maxi," "overnight," 20 and the like, as a guide to selection based on the user's conception of expected absorbency performance, and perceived need.

The following examples illustrate the practice of the invention, but are not intended to be limiting thereof.

**Example I**

25 Although the number of types of absorbent articles may vary as desired, three types of sanitary napkins are shown in Figure 3. As shown in Figure 3, a "multi-pack" kit 12 comprising light, regular, and extra absorbency sanitary napkins is prepared. The kit 12 consists of three different signal colors 14, 15, and 16 to denote the respective absorbencies of the light, regular, and extra absorbency sanitary napkins within the kits. The signal color white 14 denotes light 30 absorbency. The white signal color 14 is displayed on the graphic 23 which is on the exterior container 27. The signal color 14 and a distinctive design 39 is displayed on the wrapper 9. The signal color gray 15 denotes regular absorbency. The gray signal color 15 is displayed on the graphic 24 which is on the exterior container 27. The signal color 15 and a distinctive design 40

is displayed on the wrapper 9. The signal color black 16 denotes extra absorbency. The black signal color 16 is displayed on the graphic 25 which is on the exterior container 27. The signal color 16 and a distinctive design 41 is displayed on the wrapper 9 of the article. The container of the "multi-pack" kit has three windows 17, 18, and 19, which reveals the thickness of each type of sanitary napkin by allowing a consumer to see the absorbent articles through the windows.

In an alternate mode, the kit 12 can comprise a combination of pantiliners, sanitary napkins, and interlabial devices, each appropriately color-coded to indicate their respective differences in absorbencies in the manner described above. Figure 4 is the color legend for white, black, and gray.

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#### Example II

Another example is a diaper that has the performance characteristic of size. Multiple diapers are separately packaged in film unit wrappers having the colors: green, pink, purple, blue, and yellow. The Premie-sized diapers are packaged in green wrappers. The Newborn-sized diapers are packaged in pink wrappers. The Small-sized diapers are packaged in purple wrappers. The Small-Medium-sized diapers are packed in blue wrappers. The Large-sized diapers are packed in yellow wrappers.

As shown in Figure 1, window 10 is used to indicate and reinforce performance characteristics by matching the color of the performance characteristic on the exterior of container 27 with the performance characteristic of the wrapper 9 of the article 6 or with just the article 6. The window 10 allows the consumer to know in advance the quality and characteristic of the product inside of the container 27. The window 10 empowers the consumer to quickly pick the right article 6, which in turn matches the value expectations of the article 6.

Referring primarily to Figure 1, one or more windows 10 may be placed on its packaging in any shape such as droplets, circles, parallelepipeds, or the like. The window 10 may encompass the entire article or may encompass part of the article 6. Specifically, window 10 may be placed anywhere on the container 27, e.g. on the top, sides, or bottom, or all three. Furthermore, the overall trade dress of the article may use the window 10 in a variety of ways. When so employed, the window 10 provides an easy and intuitive method for identifying and selecting the proper article 6 (for example, that with the desired absorbency). Another benefit of the window is aiding the consumer in color recognition to choose the right article 6 and identify the proper thickness of the article 6. Additionally, the consumer is able to visually inspect the

article that decreases the consumer's need to open the package in the store. Thus, the window 10 improves the communicational aspects to the consumer of the article 6 inside of the container 27.

As shown in Figure 1, the window 10 must be clear or substantially clear to see the article's performance characteristic or a portion of the article's performance characteristic.

5 Within the context of this description, the window 10 is "clear" if it provides the consumer the capability of looking through the window 10 to view the article 6 or a portion of the article's performance characteristic. The term "clear" refers to the material capability of transmitting light so that the component, or a portion thereof, can be seen as clearly as if there were no intervening material between the component and the perceiver. Furthermore, the "see-through" 10 clarity indicates the degree of distortion of an object that can be seen through a film. (See The Wiley" Encyclopedia of packaging technology). The material for the window 10 is clear or "substantially clear" when light readily passes through, such that the performance characteristic located opposite the clear material can be viewed by the naked eye. The window 10 can be "substantially clear" when the window is frosted or not frosted in a matte or gloss finish.

15 Blown, cast, coextrusion, and laminations can be used for extruding a clear film that gives the advantage to print and leaves an area uncovered for a window. A possible window material can be any blend of polymer with no added pigments.

An additional window 11 may also be located on any part of the exterior of the container 27 to act as a repurchase indicator. Specifically, a repurchase indicator provides the consumer a 20 visual means to indicate the amount of product in the package. The window 11 can be located anywhere on the container 27. The window 11 may be the entire container 27 or any portion of the container 27. The window 11 may have a measuring means of the articles 6 on the container 1 which indicates the amount of articles left in the container 27. The measuring means may be any means known in the art. The measuring means may be a line indicator 20. The window 11 25 allows the consumer to easily determine the amount of article 6 left in the container. As a result, the consumer can determine their need to acquire more of the particular article. For example, as shown in Figure 1, the line indicator 20 indicates to the consumer that eight sanitary napkins are left in the container 27.

All documents cited in the Detailed Description of the Invention are, are, in relevant part, 30 incorporated herein by reference; the citation of any document is not to be construed as an admission that it is prior art with respect to the present invention.

While particular embodiments of the present invention have been illustrated and described, it would be obvious to those skilled in the art that various other changes and

modifications can be made without departing from the spirit and scope of the invention. It is therefore intended to cover in the appended claims all such changes and modifications that are within the scope of this invention.